

REMARKS

Double Patenting Rejection:

Applicants are filing a terminal disclaimer herein to overcome the non-statutory obviousness-type double patenting rejection as being unpatentable over claims 1-8 of commonly owned co-pending U.S. Pat. Appl'n. No. 10/568,109 in view of Kowachi (U.S. 2003/048961). Accordingly, Applicants respectfully request this rejection be withdrawn.

Claim Rejections Under 35 U.S.C. §112:

Applicants have amended claim 6 to overcome the rejection thereof as being indefinite for failing to particularly point out and distinctly claim the subject matter applicant regards as the invention. As amended, the claimed range of thickness for the nickel layer is no longer in conflict with claim 1 from which it depends. Accordingly, Applicants respectfully request this rejection be withdrawn.

Claim Rejections Under 35 U.S.C. §103(a):

Applicants respectfully traverse the rejection of claims 1-8 as being unpatentable over Kawachi (U.S. 2004/0241489, referred to hereafter as the '489 publication) in view of Kawachi (U.S. 2003/0048961, referred to hereafter as the '961 publication). Applicants have amended claim 1 to more clearly recite patentable subject matter over both the '489 publication and the '961 publication, whether considered separately or in combination, and thus, believe the rejection should be withdrawn.

As amended, claim 1 recites a composite multilayer material for plain bearings or bushings, having a backing layer, a bearing layer, a nickel intermediate layer, and an overlay. The overlay has been amended to consist of about 0-20 wt% copper and/or silver, with the rest of the overlay being tin, and the nickel intermediate layer being greater than 4 μm .

In contrast, the '489 publication discloses an overlay having a bismuth-based alloy, and not a tin-based alloy, as claimed by Applicants. This is acknowledged by the Examiner. Further, the '489 does not provide any guidance as to the thickness of it intermediate layer 4, which is acknowledged by the Examiner. And so, the Examiner looks to the '961 to incorporate the intermediate layer 3 therein, with a stated thickness

being between 0.5 to 8 μ m, to render the obviousness rejection. However, given the '961 also discloses an overlay 4 that is bismuth-based, in lieu of the present amendment to claim 1, the combination still fails to arrive at Applicants claimed structure. There is no hint or disclosure within either reference to arrive at Applicants overlay consisting of a tin-based alloy with at least one of copper or silver ingredients.

Accordingly, Applicants believe amended claim 1 to define patentable subject matter and to be in proper form for allowance. Such action is respectfully requested.

Applicants respectfully traverse the rejection of claims 1-8 as being obvious over Mori (U.S. 4,832,801, referred to hereafter as the '801 patent). Applicants have amended claim 1 to more clearly recite patentable subject matter over the '801 patent, and thus, believe the rejection should be withdrawn.

Claim 1, as amended, is recited in part above. As noted, the overlay consist of about 0-20 wt% copper and/or silver, with the rest of the overlay being tin, and the nickel intermediate layer being greater than 4 μ m.

In contrast, the '801 patent discloses an overlay having a lead- based alloy, and not a tin-based alloy, as claimed by Applicants. This is acknowledged by the Examiner. Further, any elements other than copper, silver and tin are excluded by Applicants' claim 1, as amended. As such, the '801 patent can not be viewed to render Applicants' claimed invention as being obvious, as there is no guidance within the '801 patent to arrive at claim 1, as amended.

Accordingly, Applicants believe amended claim 1 to define patentable subject matter and to be in proper form for allowance. Such action is respectfully requested.

Applicants respectfully traverse the rejection of claims 1-8 as being obvious over Roemer (U.S. 3,950,141, referred to hereafter as the '141 patent). Applicants have amended claim 1 to more clearly recite patentable subject matter over the '141 patent, and thus, believe the rejection should be withdrawn.

Claim 1, as amended, is recited in part above. As noted, the overlay consist of about 0-20 wt% copper and/or silver, with the rest of the overlay being tin, and the nickel intermediate layer being greater than 4 μ m.

In contrast, the '141 patent discloses a bearing having a steel backing 5, and intermediated lead-bronze layer 4, an extremely thin nickel layer 3 (0.001 to 0.002mm or 1-2 μ m) intended to serve as a diffusion barrier, a hard supporting nickel-tin alloy layer 2

(0.006mm-0.008mm), and a non-permanent lead-tin-copper alloy run-in layer 1 of 10% tin, 3% copper, with the remainder lead. As such, given layer 1 is a run-in layer, and thus disappears after initial use, the bearing layer 2 equates to Applicants overlay, and the extremely thin nickel layer 3 equates to Applicants intermediate nickel layer.

Accordingly, not only does the '141 patent not have an overlay consisting only of about 0-20 wt% copper and/or silver, with the rest of the overlay being tin, but it also does not disclose an intermediate layer of nickel being greater than 4 μ m.

Accordingly, Applicants believe amended claim 1 to define patentable subject matter and to be in proper form for allowance. Such action is respectfully requested.

Applicants respectfully traverse the rejection of claims 1 and 4-8 as being obvious over Tanaka (U.S. 5,328,772, referred to hereafter as the '772 patent). Applicants have amended claim 1 to more clearly recite patentable subject matter over the '772 patent, and thus, believe the rejection should be withdrawn.

Claim 1, as amended, is recited in part above. As acknowledged by the Examiner, the '772 patent does not provide an overlay consisting only of about 0-20 wt% copper and/or silver, with the rest of the overlay being tin. Rather, the overlay in the '772 patent is a lead-based overlay having a limited Sn content between 2-8 wt%. If the Sn content is less than 2 wt%, the overlay will have poor strength and poor abrasion resistance. If the Sn content exceeds 8 wt%, the melting start temperature of the overlay will become too low.

Accordingly, Applicants believe amended claim 1 to define patentable subject matter and to be in proper form for allowance. Such action is respectfully requested.

Applicants respectfully traverse the rejection of claims 1-7 as being obvious over Brown (U.S. 3,658,488, referred to hereafter as the '488 patent). Applicants have amended claim 1 to more clearly recite patentable subject matter over the '488 patent, and thus, believe the rejection should be withdrawn.

Claim 1, as amended, is recited in part above. As acknowledged by the Examiner, the '488 patent does not provide an overlay consisting only of about 0-20 wt% copper and/or silver, with the rest of the overlay being tin. Rather, the '488 patent discloses a lead-based alloy overlay.

Accordingly, Applicants believe amended claim 1 to define patentable subject matter and to be in proper form for allowance. Such action is respectfully requested.

Applicants respectfully traverse the rejection of claims 1-8 as being obvious over Huhn (U.S. 2001/0016267, referred to hereafter as the '267 publication). Applicants have amended claim 1 to more clearly recite patentable subject matter over the '267 publication, and thus, believe the rejection should be withdrawn.

Claim 1, as amended, is recited in part above. In particular, the overlay has been amended to consist of about 0-20 wt% copper and/or silver, with the rest of the overlay being tin, with the nickel intermediate layer being greater than 4 μm .

In contrast, the '267 publication discloses a bearing metal layer applied to a steel backing layer, with a first intermediate layer of nickel applied to the bearing metal layer. The first intermediate layer of nickel is preferably from 1 to 4 μm (paragraph [0030]). A second intermediate layer consisting of nickel and tin is electrodeposited on the first intermediate layer. the second intermediate layer is preferably between 2 and 7 μm . The ratio of nickel to tin in the second intermediate layer corresponds approximately to an atomic ratio of 1:1. A tin-based overlay is then electrodeposited on the nickel-tin intermediate layer. The thickness of the overlay is preferably from 5 to 25 μm . The first intermediate nickel layer contributes to the equilibrium-determined growth of the second intermediate tin-nickel layer, in that the tin-nickel layer is not only fed with tin from the overlay, but also with nickel from the first intermediate layer. As such, the 1:1 ratio of tin to nickel in the second intermediate tin-nickel layer is maintained (paragraph [0030]). As such, given the first intermediate nickel layer diminishes after use, the '267 publication a pure nickel layer thickness capable of being no greater than 4 μm , unlike Applicants claimed nickel layer herein, which is greater than 4 μm .

Accordingly, Applicants believe amended claim 1 to define patentable subject matter and to be in proper form for allowance. Such action is respectfully requested.

Claims 2-8 are ultimately dependant upon independent claim 1, and thus, are believed to define patentable subject matter for at least the same reasons and to be in proper form for allowance. Such action is respectfully requested.

Appln. No.: 10/568,110

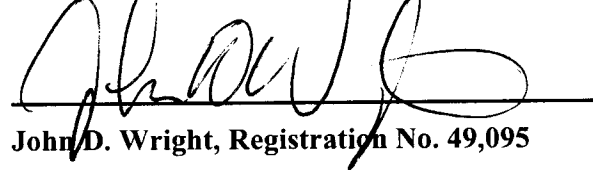
Reply to Office action of January 5, 2007

It is believed that this application now is in condition for allowance. Further and favorable action is requested.

The Patent Office is authorized to charge or refund any fee deficiency or excess to Deposit Account No. 04-1061.

Respectfully submitted,

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A handwritten signature in black ink, appearing to read "John D. Wright", is written over a horizontal line.

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